

Erythromycins/lincosamind/macrolides (49%), Penicillins (39%), Cephalosporin (9%) and Sulfonamides/Trimethoprim (3%). Out of 6 factors explored, only pediatricians were more likely to prescribe antibiotics for acute bronchitis than non-pediatricians (OR = 12.78; 95% CI, 1.42–115.19). **CONCLUSIONS:** Our study confirms the dramatic decrease in potentially inappropriate antibiotic prescribing for children diagnosed with common colds and URIs. The rate of potentially inappropriate antibiotic prescribing remained high (79%) for children diagnosed with bronchitis with the highest rates observed for children seeking care from a pediatrician. More than half of antibiotic classes prescribed for bronchitis were considered to be ineffective for underlining pathogens in cases of bacterial bronchitis complications.

PIN34

INITIAL ANTIVIRAL TREATMENT OF CHRONIC HEPATITIS C: A GERMAN HEALTH TECHNOLOGY ASSESSMENT AND DECISION ANALYSIS

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OBJECTIVES: The objective of this health technology assessment (HTA) commissioned by the German Agency for HTA/ German Federal Ministry of Health was to establish an interdisciplinary expert network, to systematically review the evidence on effectiveness and cost-effectiveness of initial antiviral combination therapy for chronic hepatitis C (CHC) and to apply these data in the context of the German health care system. **METHODS:** A systematic literature review was conducted and study quality/transferability to the German context were assessed using standard instruments of the German Agency for HTA. A decision-analytic Markov model was developed including pooled short-term outcomes (sustained virological response [SVR] and respective pooled relative risks) from a recently published Cochrane Review, single RCTs, utilities from a large German quality-of-life survey in CHC patients (n = 428), and German cost data. The model was used to determine long-term morbidity, life expectancy, and lifetime costs of different treatment strategies using the societal perspective. One- and multi-way sensitivity analyses were performed. **RESULTS:** International clinical studies indicate that combination therapy with pegylated interferon and ribavirin (PCOM) achieves highest SVR (54–61%), followed by standard combination therapy with interferon and ribavirin (SCOM) with 37–54%, and interferon monotherapy (MONO) with 11–21%. Based on international cost-effectiveness studies, SCOM is “cost-effective” compared to MONO. Our decision analysis confirmed these findings for the German health care context. No published articles were available for assessing the cost-effectiveness of PCOM. Based on our decision analysis,

PCOM dominated SCOM, and its discounted incremental cost-effectiveness ratio compared to MONO was €8,200 per quality-adjusted life year. These results were robust in sensitivity analyses. **CONCLUSIONS:** This HTA suggests that initial combination therapy should prolong life, improve quality-adjusted life expectancy, and be cost-effective in patients with chronic hepatitis C. The combination of pegylated interferon and ribavirin is currently the most effective and efficient antiviral treatment for CHC.

PIN35

VARICELLA VACCINATION OF PRE-SCHOOL CHILDREN: DETERMINING OPTIMAL COVERAGE LEVELS

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OBJECTIVES: High coverage is crucial for the success of vaccination strategies. We investigate the effect of different coverage levels of varicella vaccination in Germany on the possible elimination of varicella, clinical effectiveness (measured as percentage of preventable varicella cases prevented), possibility of age-shifts, and economic outcomes. **METHODS:** Using an established, age-structured, decision-analytic model named EVITA (Economic Varicella Vaccination Tool for Analysis), we analyze the impact of vaccinating children aged 15 months against varicella-zoster-virus. Main assumptions are: efficacy 86%, costs discounted by 5%, analytic time horizon 30 yrs. Coverage levels are varied from 0% to 100%. **RESULTS:** For coverage levels above 75%, varicella can be eliminated within 26.5 years (at 75%), 18 years (at 85%) and 14.5 years (at 100%). At coverage levels below 30% clinical effectiveness is smaller than the respective coverage levels, from 40% to 70% clinical effectiveness is higher than coverage showing the strong effect of herd immunity. Above 70% clinical effectiveness remains nearly constant due to the elimination. Because vaccination is very effective in reducing the number of cases in young children, the relative proportion of varicella cases of adolescents and adults increases. However, the total number of cases declines in all age groups for coverage levels above 50%, i.e. no age-shift occurs. Costs rise linear with coverage, savings rise even steeper until 70% coverage and remain constant for higher coverage levels. Therefore, net savings are greatest at coverage levels of about 70%. Benefit-cost-ratios rise up to coverage levels of 70% and fall for coverage higher than 80%. All benefit-cost-ratios are above 1 showing that net savings occur from both perspectives the payers' and the societal. **CONCLUSIONS:** Epidemiological considerations favor coverage levels of more than 75% to eliminate varicella and to ensure that no age-shift occurs. From

an economic perspective, vaccination with these coverage levels is cost-beneficial.

PIN36

INCIDENCE OF SEVERE SEPSIS IN THE NETHERLANDS: A POINT PREVALENCE SURVEY

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OBJECTIVES: To determine the annual incidence of severe sepsis in the Netherlands by performing a point-prevalence survey in multiple intensive care units. **METHODS:** ICU's were invited to participate in a one-day survey and monitor patients during the first 24 hours of their stay, if they were admitted with a proven/suspected infection. Patient-specific questionnaires captured demographic and clinical information, presence of Systemic Inflammatory Response Syndrome (SIRS), and the functional status of seven organ systems. The annual national incidence was calculated from the results of the survey following two approaches: 1) by multiplying the survey incidence (patients/day) with the number of days per year, corrected for the fact that the survey was held on a weekday, and 2) by using the relation $P = I \cdot D$ (P for prevalence, I for incidence and D for duration of stay) in which P was known from the survey and D was estimated as the geometrical mean of duration-to-date. **RESULTS:** Forty-seven ICU's participated (in 43 general and 4 university hospitals), representing 42% of the national admission capacity. During the study-period, 18 patients meeting criteria for severe sepsis were newly admitted, and another 116 patients with severe sepsis were already present. According to the first calculation method, the annual incidence of severe sepsis was $13,137 \pm 2,821$ patients, whereas the second method, with an estimated D of 13.3 ± 1.1 days, lead to a calculated incidence of $8,643 \pm 929$ patients/year. **CONCLUSIONS:** Using the results from a point-prevalence survey, different approaches lead to different outcomes. Both approaches hold advantages and disadvantages. The second method is considered superior because it is based on a larger population and is less sensitive to daily variations.

PIN37

A COMPREHENSIVE NATURAL HISTORY MODEL OF HUMAN PAPILLOMAVIRUS (HPV) INFECTION AND CERVICAL CANCER: POTENTIAL IMPACT OF AN HPV 16/18 VACCINE

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OBJECTIVES: HPV DNA has been detected in up to 99.7% of all cervical cancers, and infection with 2 types

(HPV-16, 18) accounts for more than 50% of cases. We developed a computer-based Markov model of the natural history of HPV infection and cervical carcinogenesis to project the impact of a prophylactic vaccine against HPV 16/18 infection on the age-specific incidence and lifetime risk of invasive cervical cancer, precursor cervical lesions, and type-specific infection with HPV. **METHODS:** A comprehensive literature review was conducted to define plausible ranges for parameter values and the model was then calibrated to the best available population-based data. We explored the impact of alternative assumptions about vaccine efficacy, waning immunity, and competing risks associated with non-16/18 HPV types in vaccinated women. **RESULTS:** The model predicted a peak age-specific cancer incidence of 90 per 100,000 in the 6th decade, a lifetime cancer risk of 3.7%, and a reproducible representation of type-specific HPV within precancerous lesions and cervical cancer. A vaccine that prevented 98% of persistent HPV 16/18 was associated with an approximate equivalent reduction in 16/18-associated cancer and a 51% reduction in total cervical cancer. A vaccine that prevented 75% of persistent HPV 16/18 was associated with a 70% to 83% reduction in 16/18-associated cancer cases. Several modeling assumptions were identified that resulted in amplification or blunting of the vaccine's effect on outcomes—however, when the vaccine was either very ineffective (e.g., less than 20% efficacy) or very effective (e.g., more than 80% efficacy), the differences in projected outcomes associated with these were minimal. **CONCLUSIONS:** A prophylactic vaccine that prevents persistent HPV 16/18 infection can be expected to significantly reduce HPV-16/18-associated LSIL, HSIL and cervical cancer.

OTHER DISEASES/DISORDERS—Economic Outcomes

POB1

AN ECONOMIC EVALUATION OF NOVOSEVEN IN THE MANAGEMENT OF HAEMOPHILIA PATIENTS WITH INHIBITORS IN SLOVAKIA

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OBJECTIVES: It was hypothesised that the total cost of managing a bleed in haemophilia patients with high titre, high responding inhibitors (from initiation of the bleed to resolution) by FEIBA or NovoSeven would be comparable due to a higher first-line efficacy despite the greater cost of NovoSeven. **METHODS:** Direct costs were compared from the perspective of the National Health Service. Resource utilisation was based on a retrospective analysis of bleeding episodes treated in Slovakia during the period 1990–2001. Clinical outcomes were based on a review of the international literature, data obtained from the retrospective analysis and the consensus of an expert panel of five Slovakian. A decision analytic eco-